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Reply Comment

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Reply Comments on Service Rules for the 698–746, 747–762 and 777–792 MHz Bands, Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band

The Maryland Broadband Cooperative respectfully requests that the FCC Rulemaking include the following items, many of which have already been put forth by the Commission as possible alternatives:

1. For the management and administration of the Public Safety spectrum, Regional entities, with non profit status would be an excellent alternative to one national entity to perform the same purpose. Maryland has already implemented such organizations with authority to enable broadband for both State Agencies and affiliates and to provide infrastructure for Private partners. Maryland could be, and would like to be regional solution for the geographical territory of the State through the entities already in place. No one knows our local first responder needs better than our own state. No one is better able to manage those priorities better than local authorities. We would further recommend that a Mid Atlantic Regional Coordinating Council for Public Safety broadband network administration be established to insure continuity of planning and interoperability. This will be the quickest and most manageable way to implement Public Safety Wireless Broadband for the region. We respectfully suggest that this plan will work for the rest of the Country as well.
2. If the approved auction process is the vehicle used for the determination of spectrum licensing for this process than entities such as the Maryland Broadband Cooperative, who wish to participate, should have the pre bid financial requirements either waived or substantially adjusted. It would

make no sense for Maryland Broadband who, to this date, has been fundamentally funded through Federal and State Grants and Loans, and has no revenues as of this date, to reallocate those development resources to become an ante for the bidding process. The Maryland Broadband Cooperative Member Community, who, for the most part are private for profit companies, comprising the Public – Private Partnership, and who will be the last mile provider of the services for both the Public Safety and general public users, will, through their revenue stream, fund the licensing costs of the spectrum usage, as apposed to the one time license fee. We respectfully suggest that this process can be a viable alternative to the cumbersome and costly existing Universal Service process. This method can provide **Net Revenue** compensation to the FCC, through Maryland Broadband Cooperative that will enable a continuing revenue stream and will negate the requirement for supplemental Universal Service contributions and receipts.

3. We would further suggest that the Commission consider both a Preference for non profit entities representing the Public Safety concerns as well as rapid rural deployment of broadband and the reestablishment of spectrum CAPS for those large commercial organizations who dominate the spectrum inventory and have, to date, demonstrated no interest in providing the necessary rural deployment required for both Public Safety and general public use.

Discussion

The status of broadband penetration in Maryland rural areas

One of the most incongruous research products from this exercise is that there is no credible information from any source relative to the actual penetration of broadband within the State of Maryland, urban or rural, and for that matter, any other State in the United States. The most recent report of broadband penetration was issued by the FCC on March 19, 2008 covering the period of the first half of 2007. That report concluded that "broadband services are currently being deployed to all Americans in a reasonable and timely fashion." The report indicated that "high speed lines" increased from 82.8 million to 100.9 million lines in service. "High-speed lines--meaning, mind you, capable of 200Kbps or greater data transfer speeds--grew from 82 million to 100 million lines during that time, the FCC said. Its report also found that an Internet service provider reported having at least one connection in 99 percent of the country's ZIP codes, and that 99 percent of the American population lives in those ZIP codes." (From the March 19th FCC Report of Form 477). Commissioner Copp referred to the information in the report and the Zip Code methodology of data collection as "stunningly meaningless". If service is being

provided to one individual with an address in a Zip Code area, the entire Zip Code area is assumed to be served with broadband service. This, of course, need not be the case.

There are two areas of measurement that cause the information to be less than useful. 200kbts/sec transmission speed in at least one direction is agreed by most to be unacceptable as a measure of high speed performance and one customer per Zip Code area is not sufficient to estimate that the entire Zip Code area is served.

A complementary measurement is provided on a world wide basis by the Directorate for Science, Technology and Industry of the Organization for Economic Co-operation and Development (OECD). Based on their metrics, the United States has a national penetration of 69.9% and a ratio of 23 individuals per 100 populations, significantly different than that reported by the FCC. With these number the United States ranks 15th in the world, behind Luxemburg in broadband penetration.

While specific metrics may be speculative some general conclusions can be derived. Broadband penetration in rural areas is significantly lower than it is in urban areas, and the difference cannot be explained by lack of demand only. In other words, if broadband service is evenly available in 99% of Zip Code areas, than penetration should be more or less even across all areas, urban and rural, and it is not. Reasonable estimates based on anecdotal information, such as students with broadband Internet access at home and in school and other similar data support an expectation that more than 60% of the rural populations are either unserved or underserved for broadband. Unserved means that the only source for broadband is through a satellite provider while Underserved means that service is available only from either one telco provider or one CATV provider or one of each, with no other selectable option.

The fifteen rural counties of Maryland, representing the founding Members of Maryland Broadband Cooperative (Mdbc) constitute close to twenty percent of the population of Maryland, or 1,000,000 residents. If the metric described above is close to being representative, over 600,000 residents are unserved or underserved for broadband.

Contribution of Maryland Broadband Cooperative in providing cost-effective core network backhaul in interconnection with Internet backhaul providers

As stated in the Mdbc Website, www.mdbc.us, "The Maryland Broadband Cooperative (MDBC) is a public/private partnership to promote economic development through the deployment of technology supporting infrastructures.

Our Mission is to drive economic development through universal, open access to

broadband services via a fiber optic network that serves rural Maryland by building an advanced, world-class broadband network across the rural communities of Eastern, Southern and Western Maryland supported by its' members who provide "Last Mile" services".

During the short time since inception, MDBC has constructed over 300 miles of high quality single mode fiber across the entire Eastern Shore, including a significant installation across the Bay Bridge, connecting the Eastern Shore with the Mainland through a key broadband link. In addition, they have successfully launched their non profit – Private partnership through the enrollment of over twenty Member Partners ready to carry the broadband services the last mile to the Maryland residents and businesses.

MDBC offers a unique platform for a successful business case for providing reasonably priced, cost effective broadband services in rural areas, allowing the Private partners the ability to realize reasonable profits and allowing the non profit Coop to achieve its economic development goals while covering essential costs. For the ISP or WISP, backhaul costs can be an overwhelming expense, forcing them to establish prices that exceed their prospective customer's ability to pay. It should be noted here that in many cases the issue is not direct competition, which may not exist in the market. Rather the issue is ability to pay for any service priced so high. This is why MDBC becomes a business enabler, satisfying its role of Economic Development.

The fiber backbone network of MDBC is, indeed an example of a "technology supporting infrastructure" as identified in their Mission Statement. Should MDBC become an administrator of spectrum for their Private Partners, that, also would become a major benefit to them and would be another excellent example of "technology supporting infrastructure", as is the fiber network.

Necessity of wireless broadband for last mile ISP private member partners

It is totally understandable why the legacy service providers, wireline and wireless telco's and CATV operators have not deployed their broadband services throughout the rural areas of Maryland and beyond. Existing broadband services from telco's have been provided primarily through Digital Subscriber Line (DSL) equipment. This equipment is most efficient within short distances from central offices. CATV companies have provided similar services through cable modem services provided through Hybrid Fiber Coax distributed networks. To upgrade their services, significant capital expenditures are required and if there is not sufficient population density their investment goals cannot be realized to support the added investment. Some telco's are experimenting with Fiber to the Home (FTTH) installations but the ability to support the needed investment in rural areas is problematic.

It is well understood in both the telco and the CATV industries that the most cost effective last mile connectivity for broadband is through wireless technologies recently made available with WiMax or LTE. Certifiable equipment is now available for WiMax installations and LTE is scheduled to become available in 2009. The licensed wireless spectrum supporting these technologies is in the 2.5GHz range and the 700MHz range in the United States. According to FCC database reports, Spring/Nextel and Clearwire control a vast majority of that licensed spectrum. This spring, the FCC auctioned large amounts of the 700MHz spectrum. Verizon and AT&T secured equally large amounts of that spectrum.

It is a rational assumption to expect that rural areas will not see the benefit of built out networks using WiMax or LTE wireless broadband for years to come. The holders of the spectrum will build out areas with the greatest near term payback first. Rural areas will come later, if at all. In the meantime, the incumbents will inventory the spectrum asset and others will not have access to spectrum for alternative service provider capability.

Sources of Wireless spectrum

In the United States, the Federal Communications Commission (FCC) controls all spectrum for commercial use, while the National Telecommunications and Information Agency (NTIA) manages spectrum for Federal Departments. Through the FCC there are only two ways an enterprise can receive a license for spectrum, participate in an FCC sponsored and managed auction and sub license spectrum from someone who already has it. Participation in auctions can be very costly. In the recent auction for 700MHz spectrum, Auction 73 held this last spring, pre bid down payments ranged from several hundred thousand dollars to several million dollars for reasonably sized service areas.

Many in the industry were very dissatisfied with the outcome of Auction 73, as it related to providing more spectrum to companies who were likely to build out wireless broadband in rural areas. The comments from the SVP and General Counsel for Leap Wireless before the Congressional Hearing are noteworthy in considering the value of the recent auctions, "We have been concerned in recent years with the ever-increasing consolidation of spectrum assets and market share into the hands of the nation's largest wireless carriers, and the consequences that this portends for Leap and other small and mid-sized carriers," Irving said, according to his prepared remarks.

- One disturbing trend in wireless: Two of the largest carriers increased their vast spectrum holdings thanks to the auction. Verizon Wireless and AT&T contributed \$16.3 billion of the total \$19.6 billion raised during the auction.
- Meanwhile, Leap and Alltel won no licenses, while MetroPCS won one license.
- The auction provided limited bidding opportunities for small and mid-sized carriers and little headway was made in bringing new entrants into the industry.

- The creation of large geographic areas in the C Block made it difficult for smaller and mid-sized carriers to compete.
- The complex public/private partnership framework for the D Block, especially the extremely stringent geographic build out requirements, made the spectrum slice highly unattractive.
- The FCC should examine whether breaking the D Block into smaller segments makes better sense and whether AT&T or Verizon Wireless should be allowed to bid on it given the large swaths of 700 MHz spectrum those carriers already have.” (Fierce Wireless, 2008).

Having the criticality of the spectrum asset in the hands of a few who have demonstrated their unwillingness to build broadband in rural areas is a valid predictor of the future broadband development in the United States. It is important to recognize that there is precedent at the FCC for both limiting the amount of spectrum that single entities can control, through spectrum license Caps, and to provide preferences to bidders who represent economic or social objectives recognized by the FCC.

Influence of Network Neutrality and Wireless Broadband Access penetration; proposed legislation

Much of the argument about net neutrality centers on the open access to broadband networks by providers of content so they will have unimpeded access to those customers who wish to consume their products and, thereby produce revenue for the content owner. However, as a precondition for consumption of the content, the potential consumer must have access and that access must support the ability to consume the product. In most, if not all cases in today’s Internet marketplace that means the consumer must have broadband.

Congressman Ed Markey of Massachusetts is very focused on these issues and has introduced legislation both last year with HR 3919, [Broadband Census of America Act of 2007](#) - To provide for a comprehensive nationwide inventory of existing broadband service, and in 2008 with [H.R.5353 - Internet Freedom Preservation Act of 2008](#) - To establish broadband policy and direct the Federal Communications Commission to conduct a proceeding and public broadband summits to assess competition, consumer protection, and consumer choice issues relating to broadband Internet access services.

Maryland Senator Barbara Mikulski’s office is also supportive of efforts to move the development of rural broadband throughout as demonstrated by her continuing efforts to support Maryland Broadband Cooperative in its Mission. Whether any of the activities presently in play will result in substantive change is unknown at this time.

On May 21, 2008, the FCC published in the Federal Register, a Proposed Rule, [WT Docket No. 06–150; PS Docket No. 06–229; FCC 08–128] **Service Rules for the 698–746, 747–762**

and 777–792 MHz Bands, Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band. The reason for this Proposed Rulemaking is, per the Federal Register explanation, “Specifically, the Commission required that the winning bidder of the commercial license in the Upper 700 MHz D Block (758–763/788– 793 MHz) (D Block) enter into the 700 MHz Public/Private Partnership with the nationwide licensee of the public safety broadband spectrum (763–768/ 793–798 MHz) (Public Safety Broadband Licensee) to enable construction of this interoperable broadband network, which would span both the commercial D Block and public safety spectrum. In the recently concluded auction of Commercial 700 MHz licenses, bidding for the D Block license did not meet the applicable reserve price of \$1.33 billion and, pursuant to the Commission’s rules, there was no winning bid for that license.”

There are a number of suggestions offered by the Commission as far as methods for approaching the Public Safety Spectrum management issue and there is substantial unlicensed 700MHz spectrum covering geographical areas of Maryland that was not licensed in Auction 73 this spring that is available to be re-auctioned. **It is suggested that Maryland has the resources and can develop a plan to address both the issue of managing the Public Safety Spectrum in a satisfactory way and manage the commercial spectrum through it existing public private partnerships that already exist through prior actions already taken by the State.**

How to Establish a Regional Public Safety Network for Maryland, with spectrum Management housed with Maryland Broadband Cooperative and other existing State organizations.

Maryland has a legislatively chartered entity in place to manage, administer and operate broadband networks throughout the State, Maryland Broadband Cooperative.

Maryland Broadband Cooperative has substantial assets in place, active operational plans with users on their network and Management resources to effectively grow their rapidly developing enterprises, both from organic growth and through their Member partners. Maryland Broadband Cooperative works with its Private Member partners to serve the business and residential communities, as well as selected Federal and State entities throughout Maryland.

Maryland Broadband Cooperative respectively suggests that including the proposed changes in the Proposed Rulemaking will produce many benefits:

- Implementation of a secure, robust Public Safety Wireless Broadband Network will occur quickly and efficiently in the State of Maryland, and other States as well that follow this model suggested here.
- A National technology and operational specification can be introduced that each region must follow through certification managed by the FCC.
- Regional Coordinating Committees, such as the Mid Atlantic Regional Coordinating Committee recommended here could insure interoperability and common operations.
- The Network Neutrality debate could be managed and regional economic development could be encouraged by implementing open networks in rural areas encouraging entrepreneurs to create new e-commerce products and services that could use the rural Internet as its distribution channels. The more providers of broadband Internet there are with open architectures the more difficult it will be for mega carriers to introduce vertically integrated applications on their infrastructure and constrain competitive products.
- Last, and certainly not least, low cost and easy access to the Internet highway has proved and will continue to demonstrate lower demand on physical highway travel. Work at Home and other applications are being developed and deployed that make it easier, more convenient and less costly to earn income and spend money (shop) from home. Other applications like entertainment, interactive sports and distance learning are providing the public with better experiences from their home or neighborhood using broadband.

We thank the Commission for entertaining our comments.

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